
PART I - GENERAL CONSIDERATIONS

1.0 INTRODUCTION

1.1 Background

The "Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual", commonly referred to as the Inland Testing Manual, updates and replaces "Ecological Evaluation of Proposed Discharge of Dredged or Fill Material into Navigable Waters" (USACE, 1976). This updated manual contains technical guidance for determining the potential for contaminant-related impacts associated with the discharge of dredged material in waters regulated under Section 404 of the CWA (inland waters, near coastal waters, and surrounding environs) through chemical, physical, and biological evaluations. The technical guidance in the manual is intended for use by Army Corps of Engineers (USACE) and Environmental Protection Agency (EPA) personnel, state regulatory personnel, as well as dredging permit applicants and others (e.g., scientists, managers, and other involved or concerned individuals). The results obtained will be utilized within the context of regulatory requirements (discussed in the following sections), to facilitate decision-making with regard to the management of dredged material.

Key changes to the 1976 testing protocol include a tiered testing approach, accommodation for sediment quality standards (SQS), 28-d bioaccumulation testing, comparison of benthic test results with those of the reference sediment, improved statistics, improved model applications, and new test organisms. Because this manual is national in scope, the guidance provided is generic and may need to be modified in certain instances. Application of this guidance in some site- and case-specific situations will require best professional judgment, appropriately documented. Permit applicants and others are strongly encouraged to consult with their appropriate Regional and District experts for additional guidance.

1.2 Statutory/Regulatory Overview

The following sections provide a discussion of the statutory and regulatory framework of the Federal programs within which decisions regarding the management of dredged material discharge activities are made.

1.2.1 Statutory Overview

The USACE and EPA share the Federal responsibility for regulating the discharge of dredged material. The Clean Water Act (CWA) governs discharges of dredged material into "waters of the United States",

including all waters landward of the baseline of the territorial sea. The Marine Protection, Research, and Sanctuaries Act (MPRSA) governs the transportation of dredged material seaward of the baseline (in ocean waters) for the purpose of disposal. In addition, all activities regulated by these statutes must comply with the applicable requirements of the National Environmental Policy Act (NEPA), as well as other Federal laws, regulations and Executive Orders which apply to activities involving the discharge of dredged material.

The CWA was enacted by Congress to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA created three permit programs, under Section 401 (as a certification), Section 402 and Section 404, to regulate the point-source discharge of pollutants into waters of the U.S. EPA administers Section 402 which established the National Pollutant Discharge Elimination System (NPDES) Program to regulate discharges of chemicals, heavy metals, and biological wastes, primarily in waste water from industrial processes, publicly owned sewage treatment works, and stormwater discharges. The Section 402 program may be delegated by EPA to the States to administer. EPA and USACE each administer specific aspects of Section 404 which established a permit program and technical guidelines to regulate discharges of dredged or fill material (dredged material and fill material disposal sites must be "specified"). States may assume (and most of them have) the program administered by EPA under Section 401 and must grant, deny, or waive certification for activities permitted or conducted by USACE based on the potential impacts to water quality which may result from a discharge of dredged or fill material to waters of the U.S.

The USACE also administers a regulatory program under Section 10 of the Rivers and Harbors Act of 1899 (RHA) which regulates dredging and other construction activities in navigable waters. The USACE also operates a Federal Civil Works navigation program in conjunction with the CWA and with requirements established within Congressional authorization and appropriation statutes, which involves extensive dredging and dredged material discharge activities. These USACE programs are operated in accordance with NEPA which requires, among other things, the analysis and documentation of potential primary and secondary impacts, including those associated with dredging and dredged material discharges.

1.2.2 Section 404 Regulatory Overview

The USACE has the primary responsibility for the Section 404 regulatory permit program [the USACE regulatory program also administers Section 10 RHA, as well as Section 103 of the MPRSA (for the transport of dredged material to the ocean for the purpose of disposal)] and is authorized, after notice and opportunity for public comment, to issue permits specifying sites for the discharge of dredged or fill material. EPA has the primary role in developing the environmental guidelines, in conjunction with

USACE [the Section 404(b)(1) Guidelines (Guidelines)], by which permit applications must be evaluated. EPA is also responsible for commenting on proposed USACE permits, prohibiting discharges with unacceptable adverse aquatic environmental impacts, approving and overseeing State assumption of the program, establishing jurisdiction, and interpreting exemptions. Both USACE and EPA share enforcement authority.

The USACE regulates the discharge of dredged material, resulting from navigation dredging, into waters of the United States. The USACE also regulates the discharge of dredged material and incidental discharges of dredged material resulting from mechanized landclearing, ditching, channelization, and other excavation activities. The Inland Testing Manual has been developed to facilitate testing in conjunction with proposed dredged material discharges resulting from navigation dredging. The testing protocols are not designed or intended to be applied to discharge of dredged material and incidental discharges of dredged material resulting from mechanized landclearing, ditching, channelization, and other excavation activities, except where excavation and subsequent discharge activities are of essentially the same character as those associated with navigation dredging and disposal (e.g., open water discharges of dredged material excavated from a soft-bottom flood control channel or reservoir).

The USACE's evaluation of a Section 404 permit application involves determining whether the proposed project complies with the Guidelines (40 CFR 230) and USACE permit regulations (33 CFR 320-330) which require a public interest review of the project. [Public interest factors (listed in 33 CFR 320.4) considered with respect to dredged material contaminant-related impacts include water quality, water supply and conservation, safety, and fish and wildlife impacts]. A permit is issued provided the proposed project complies with the Guidelines and is not contrary to the public interest. The USACE issues individual permits and general permits. Individual permits are issued on a project-by-project basis after the Guidelines compliance and public interest determinations are made for the specific project at issue. General permits, on the other hand, are issued for classes of activities after the USACE conducts the Guidelines compliance and public interest reviews and determines that issuance of the general permit will not result in more than minimal adverse impacts to the aquatic environment from either a site-specific or cumulative standpoint. General permits require little or no reporting, analysis, or paperwork.

There are three types of general permits issued by the USACE, nationwide permits, regional general permits and programmatic general permits. Nationwide permits are issued by the Chief of Engineers and apply nationwide. Regional permits are issued by District and Division Engineers and are applicable on district or State-wide basis. Programmatic permits are issued (by the Chief of Engineers, as well as District and Division Engineers) to other federal, State or local agencies with the intention of providing the appropriate level of environmental protection and avoiding unnecessary duplication of effort with the agency regulatory activities at issue.

There are currently four nationwide permits that pertain to dredging and the discharge of dredged material. One authorizes the discharge and return water from confined disposal areas (provided the associated dredging is authorized pursuant to Section 10 of the River and Harbor Act of 1899); two other nationwide permits authorize the dredging and discharge, respectively, of up to 25 cubic yards of material; and a fourth authorizes maintenance dredging of existing marina basins (provided that the dredged material is deposited on uplands; return water from a confined disposal area requires separate authorization pursuant to Section 404 of the Clean Water Act). The USACE depends on its districts' knowledge of potentially contaminated areas and on the discretionary authority of District and Division Engineers to develop special conditions and/or require individual permits where contaminated sediments are present. General permits are not intended to apply to projects involving the dredging or the discharge of contaminated materials.

USACE Civil Works activities are conducted in accordance with the Guidelines and the USACE operation and maintenance regulations (33 CFR 335-338). The USACE specifies sites for the discharge of dredged material in conjunction with its regulatory and civil works responsibilities. (Permits are not actually issued in conjunction with USACE discharge activities).

1.2.2.1 The Section 404(b)(1) Guidelines

The Guidelines provide the substantive environmental criteria used in evaluating proposed discharges of dredged or fill material into waters of the United States. Fundamental to these Guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.

For proposed discharges of dredged material to comply with the Guidelines, they must satisfy four requirements found in Section 230.10 as follows. Section 230.10(a) addresses those impacts associated with the loss of aquatic site functions and values of the proposed discharge site, by requiring that the discharge site represent the least environmentally damaging, practicable alternative. Section 230.10(b) requires compliance with established legal standards (e.g., issuance or waiver of a State water quality certification). Section 230.10(c) requires that discharge of dredged material not result in significant degradation of the aquatic ecosystem. Section 230.10(d) requires that all practicable means be utilized to minimize for adverse environmental impacts.

Testing as described in this manual is part of the larger evaluation of a proposed discharge activity to

determine its compliance with the Guidelines. Sections 230.60 and 230.61 of the Guidelines provide the basis for certain factual determinations with regard to dredged material discharge activities. Section 230.60 provides for a general evaluation of the material and establishes a framework to determine, based on existing information on the proposed dredging and discharge sites, whether the material at issue requires further testing. If the conditions at 230.60 cannot be met or are not applicable, the testing requirements of Section 230.61 must be applied. This manual details the testing procedures outlined in 230.60 and 230.61. Conclusions reached utilizing this manual will be used to make factual determinations of the potential effects of a proposed discharge of dredged or fill material on the physical, chemical and biological components of the aquatic environment. Such factual determinations are used to make findings of compliance or noncompliance with relevant parts of Sections 230.10(b) (including compliance with established water quality standards) and 230.10(c) (determinations of potential contaminant-related impacts to aquatic resources). All specifications of discharge sites must also comply with Section 230.10(a) and Section 230.10(d). Site monitoring and/or management activities developed following the use of this manual may be said to contribute to satisfying the aforementioned requirements of Section 230.10(d).

Once compliance with the Guidelines is established, information developed utilizing the manual will also be factored into the USACE public interest determination which is required by its regulatory permit regulations for proposed non-Federal dredged material discharge activities, or its determinations required by the operation and maintenance regulations pertaining to Federal Civil Works activities. In making determinations with regard to its regulatory and civil works responsibilities, the USACE considers a continuum of discharge options, on a project-specific basis, including alternative sites, mitigation and specific site management and monitoring conditions. Determination of whether a material, which would not otherwise comply with the Guidelines or with other USACE regulatory and civil works requirements, could be brought into compliance through appropriate management actions or other discharge methods, is beyond the scope of this manual.

1.2.2.2 Particulars of Sections 230.60 and 230.61

Reason to Believe - Subpart G of the 404(b)(1) guidelines requires the use of available information to make a preliminary determination concerning the need for testing of the material proposed for dredging. This principle is commonly known as "reason to believe". The decision to not perform testing based on prior information must be documented in order to provide a "reasonable assurance that the proposed discharge material is not a carrier of contaminants" (by virtue of the fact that it is sufficiently removed from sources of pollution) [230.60(b)]. The reason to believe that no testing is required is based on the type of material to be dredged and/or its potential to be contaminated. For example, dredged material is most likely to be free of contaminants if the material is composed primarily of sand, gravel, or other

inert material and is found in areas of high current or wave energy [230.60(a)]. In addition, knowledge of the proposed dredging site proximity to other sources of contamination, as well as that gained from previous testing or through experience and knowledge of the area to be dredged, may be utilized to conclude that there is no reason to believe that contaminants are present [230.60(b)] and, therefore, no need for testing. This general evaluation comprises procedures found in Tier I of the manual's tiered-testing framework. Tier I is a comprehensive analysis of all existing and readily available information on the proposed dredging project, including all previously collected physical, chemical, and biological data for both the proposed dredging and discharge sites. A more complete discussion of technical factors to consider with respect to Sections 230.60(a) and (b) in Tier I is provided in Section 4.0.

Exclusions From Testing - Sections 230.60(c) and (d) provide for specific circumstances in which the discharge of dredged material which is suspected to be contaminated may be conducted without further testing. Section 230.60(c) provides that where the proposed discharge and dredging sites are adjacent and are comprised of similar materials and subject to the same source(s) of contaminants, disposal may be conducted without further testing because the discharge is not likely to result in degradation of the discharge site, as long as the potential spread of contaminants to less contaminated areas can be prevented. Section 230.60(d) provides that the discharge of contaminated dredged material may be conducted without further testing if constraints, acceptable to USACE and EPA, are available to reduce contamination to acceptable levels within the discharge site, and to prevent contaminants from being transported beyond the proposed discharge site boundaries.

Conclusions reached with regard to dredged material discharges without testing, in accordance with Section 230.60, must be described in the appropriate factual determination. Even though material may be excluded from testing under the manual the water quality certifying agency may require testing to demonstrate compliance with state laws. Even in cases where the discharge site is adjacent to the dredging site, potential differences in contaminant bioavailability may occur.

Reference Sediment - The manual requires comparison of testing results between the proposed dredged material and a reference sediment (see previous Definitions section). The USACE and EPA believe that the use of a reference sediment provides an accurate information base for predicting cumulative bioaccumulation and benthic impacts resulting from the discharge of dredged material.

1.2.3 Relationship to Section 401 CWA Water Quality Certification

Section 401 of the CWA requires that all Federal permits and licenses, including those for the discharge of dredged material into waters of the United States, authorized pursuant to Section 404 of the CWA,

must be certified as complying with applicable State water quality standards (WQS). The Guidelines at 40 CFR 230.10(b) state in part that "No discharge of dredged or fill material shall be permitted if it: (1) Causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard." This applies at the edge of a State designated mixing zone.

The process for adoption of State WQS is prescribed at 40 CFR 131. States must issue, condition, deny, or waive a Water Quality Certification for activities permitted or conducted by USACE, certifying that no adverse water quality impacts will occur based on determinations of compliance with applicable State WQS which have been adopted in accordance with the above regulation. State water quality standards consist of designated uses, narrative and numeric criteria designed to support those uses, and anti-degradation provisions. This testing manual is intended to provide guidance for the dredged material testing necessary to determine compliance with such State WQS.

States may, at their discretion, include in their State standards policies generally affecting their application and implementation, e.g. mixing zones (40 CFR 131.13). A mixing zone is a limited volume of water serving as a zone of initial dilution in the immediate vicinity of a discharge point where receiving water may not meet quality standards or other requirements otherwise applicable to the receiving water (40 CFR 230.3). Where mixing zone provisions are part of the State standards, the State should describe the procedures for defining mixing zones.

According to EPA (1991b), mixing zone concentrations should not exceed acute water quality standards and, considering likely pathways of exposure, there should be no significant human health risks. For dredged material discharges which only occur periodically, water quality standard compliance in the mixing zone is generally focused on aquatic life, not on human health, which is based on long-term exposures to contaminants. (Long-term exposures resulting from accumulations of dredged material at the disposal site can be evaluated by such means as bioaccumulation tests). Acute or chronic standards may be appropriate, depending on the duration of discharge and characteristics of the discharge site.

Many States have statutory or regulatory requirements for use of State-owned lands, including aquatic (marine and freshwater) bedlands. For discharges of dredged or fill materials into waters of the U.S. which are also waters of State or State-owned lands, specific requirements (including testing) for "use" of State lands may exist which need to be considered. The responsible State land-management agency may be different from the agency which normally issues the WQS or coastal zone certification. At a minimum, coordination with the responsible State agency should occur to avoid conflicts with or impacts to existing and/or future uses of State lands. In parts of the country, cooperative State-federal dredged material or sediment management ventures are in place or are being pursued to identify disposal sites, develop consistent regional management standards, and to monitor maintenance of those standards [e.g.,

the Puget Sound Dredged Material Disposal Analysis (State of Washington) and San Francisco Long-Term Management Strategy (LTMS - State of California)]. These programs are intended to streamline the regulatory process associated with dredging and dredged material disposal.